THE CLAIMS ON THIS INVENTION :

(Referring to the drawings Fig 1/25 to Fig 25/25 and the description)

1. The design of this engine : An engine comprising from a cylindrical case having at least a wheel(s) (i.e. flywheel) mounted coaxially on a straight (crank)shaft inside the cylindrical case for rotation therein. The said wheel(s) containing at least one cylinder in centre-side perpendicular to the axis, in which it is opened from one side to the inside circumferential surface of the case cavity. A piston mounted inside the cylinder which has the ability of linear movement therein. The piston top together with the cylinder wall (bore) and inner circumferential surface of the case defining a combustion chamber. The piston being mounted to the closed end of the cylinder via a flexible free elastic push-arm. Seals mounted with the case meaning around the circumference of the wheel along the edge at each side, as well as at three or more radial locations guarded the mode of stroke situation zone during the work of the engine. The wheel supplied with fuel mixture inlet(s), spark plug(s) exhaust pipe(s) and air supply inlet(s) mounted in the case. In the end of exhaust stroke there is a valve feeding air in the right time on the chamber to scavenging and cleaning hot exhaust gases to cool the chamber. While these gases expelled via a specific aerodynamic opening mounted in the case. The pre-compressed air-fuel mixture charged (fed) into the chamber(s) from outside by inlet valve away from firing stroke zone, using required accessories (pressured gas cylinder, pipes and fuel spraying device all controlled by mechanical or computer system). The lubrication and cooling services working depending on the centrifugal principal by discharging oil from the main central canal inside the shaft length to engine parts via holes then to outsider case. The oil servicing for piston wall using a rod pump mounted in its push-arm connecting piston with oil intake, working related to its linear movement, sucking oil from the central oil canal . Then ended to wheel side-wall. The wheel has oil cooling pad in each side, fed from central oil canal ,collecting oil from piston(s) then to direct oil by radial grooves to the outsider case. Oil cooled in the case while directed to the oil tank in an engine end, which connected again to the central canal. Where more than one wheel inside the case each wheel could work separately with its independent fuel and air feeding accessories by controlling devises from out side.

2. The engine characterised as in claim 1 , the said engine is using combination of piston principle, rotary principle and a turbine principle in additional to utilising physical affections due to the specific movement of the engine parts in performance to act all positively to add extra powers of these energies on engine output torque i.e. magnifying the power of the said fuel.

3. The engine characterised as in claims 1,2, the said engine is using the principle of injecting pre-compressed air-fuel mixture as used in the Jet system but it is vertically on the axis of a specific wheel(s) contains piston(s) of free elastic push-arm, to work similar as a turbine. By utilising all reaction powers of fuel-mix combustion in its chamber(s) for output. This engine has the good characteristics of piston system as easily controlled with fuel economic and the turbine Jet system of speedy powerful output. The said engine would stand as the bridge on that wide gap between piston system and turbine jet system.

4. The engine characterised as in claims 1,2,3, the said engine does not have energy-loss stroke. Any piston(s) performs in the wheel with various power stroke reactions in one cycle to act all positively on the same wheel zone of the torque shaft during the work .

5. The engine characterised as in claims 1,2,3,4, this engine is using the advantage of the potential aerodynamic reactions of the exhaust gases to add more output power to the engine thus the exhaust specific opening could be in a fixed place or/and controlled places adjustment by a regulator in this engine.

6. The engine characterised as in claims 1,2,3,4,5, this engine is using the pre-compressed air-fuel mixture to feed i.e. to charge (to inject) the chambers of the engine via outside accessories. For a better combustion efficiency in squeezing more power in this modified discipline spark engine which designed to bear the various powerful mixture output , safely.

7. The engine characterised as in claims 1,to,6, this engine is using a separate system for air-fuel mixture feeding valves for each wheel or part of. The perfect performance of this discipline, due to relevant timing controlling mechanism against each chamber and their places in a portion away from firing stroke.

8. The engine characterised as in claims 1,to,7, this engine is using the principle of charging(injecting) pressured pure air on the hot piston(s) cup i.e. to the chamber directly for scavenging the exhaust gases , cooling and cleaning the chamber, during ending of exhaust stroke .Its good adiabatic affection, the

good expelling of these gases with what could be left of the soot. This could be controlled by a regulator to control the pressure and the temperature .The wheel feeding and ignition could be delayed - in highly speed - to perform for each two revolutions automatically in order to let this procedure works perfectly

9. The engine characterised as in claims 1,to 8, this engine is using a built-in system designed to reduce pollution within the engine discipline by using pressured air injected directly to the hot gases in the chambers while still hot at the end of exhaust stroke. Which will complete the oxidisation of all exhausted gases i.e. CO & NO-x (and SO-x if exist) to be in friendlier status for the environment ,preventing acid rain .This could be controlled by a regulator even away of adding the elements assisting in completing anti-pollution procedure.

10. The engine characterised as in claims 1,to 9, this engine using flexible elastic piston push-arm with free movement , which provide a good efficiency for any fuel combustion factor, even for any mix rate (different compression affect) to act on torque crank positively without losing energy. It is a way of maintaining the perfect fuel combustion in chambers, by using the flexible chamber space extending due to free elastic piston push arm. Keeping the required chamber space for a perfect fuel combustion. Keeping the best firing situation for any mixture compression reaction for each fuel regardless of fuel efficiency i.e. benzene octane ...(or fuel mix rate). However the discipline of this system will maintain all resultant energy to be transferred positively on the Crank. *Terminating knocking, rumbling problems, those exist in recent conventional engines .This engine is using a principle of free flexibility in transferring fuel combustion energy in the pistons to torque power on the crank since engine's pistons are not guided by a mechanical connection .This will provide a powerful and fast acceleration performance with the harmonic affection on engine parts.*

11. The engine characterised as in claims 1,to 10, this engine is using easy way of charging the air-fuel mix separately to each power unit as the ideal requirement by a mechanical control of simple unique pr-designed spraying device .Or by using a computer control of the multi-spraying devices for the automatic feeding requirements to each power wheel unit (energy unit) for the multi-power output engine by a wide participation of a computer in this engine.

12. The engine characterised as in claims 1,to 11, this engine is using a principle of central oil supply tunnel (canal) for lubrications and for cooling operations depending on this engine discipline by utilising the Physical Centrifugal principal of engine rotation. Its good efficiency related to the speed. The oil sump (tank) will be far from the pistons bases e.g. far from combustion hot gases affection if any leakage happened from the chambers.
13. The engine characterised as in claims 1,to 12, this engine is using an independent piston's lubrication device of rod-pump working related to piston's movement. that supplying oil to wall of piston as its movement demands (for piston's wall in the cylinder as it required), separately each by its private pump.
14. The engine characterised as in claims 1,to 13, this engine is using wheel units in transferring combustion energy smoothly to torque by flexible reaction parts without bearing stresses parts with high frictional factor, such energy loss due to neglecting the physical dynamic reactions are not existing here due to this slice and simple mechanism as this considering the power-weight ratio criteria.
15. The engine characterised as in claims 1,to 14, this engine is using a practical way of reducing fuel consumption ,by the capability of maintaining the exact required working pistons need for any type of engine application, to be for the sufficient performance that needed for the work's demand, by using the required feeding controlled from out side ,on the accessories for this purpose.
16. The engine characterised as in claims 1,to 15, this engine has the ability of the multi-output performances. Its ability of controlling any piston performance. Any piston could work or terminate as required during engine rotation, despite they are all on the same crank. This could be happened without influencing on other parts in the engine, related to the engine design concerning the multi-numbers of pistons , wheels and control of the accessories . This is because of the independent piston performance without guided by a mechanical management which leads to automatic performance, i.e. The Auto Engine .
17. The engine characterised as in claims 1,to 16, this engine is using a design of the free flexible elastic push-arm pistons ,with chambers places moving in a wheel circumference .Providing the advantages of the physical characteristics of this magic circular shape .In reducing the linear movement of working pistons in the same rotary direction inside this circle. The piston's depress

decreases with the increase of revolution speed . The physical concept of circular acceleration by its same direction linear force reaction.. A conclusion equations could be introduced to reduce the fuel needs in highly speeds due to approaching a situation of the minimum piston linear movement i.e. minimum chamber(s) expanding .Its graphical curves could be used to program the feeding controlling system for this criteria. In order to reduce the fuel mixture needs for the smaller chamber(s) expansion, rapidly. It means this system countering the said fuel consumption in increasing speed by a physical effect .

18. The engine characterised as in claims 1,to 17, this engine is using the principle of utilising the Centrifugal principal in highly speed, to reduce the fuel consumption .This is connected with the circular placing of the chambers with free movement of the pistons related with the weight of piston masses and an assumption mass for the gases in these chambers. Keeping the same reaction on the wheel(s), at these high various revolution speeds .This physical reaction will be reflected by gas pad in the chamber(s) to act on the same positive direction. This means extra descending in the said fuel consumption with speed increase for in this engine.

It means this system is also countering the fuel consumption when increasing the speed by utilising this Physical Dynamic Principal of Centrifugal.

19. The engine characterised as in claims 1,to 18, this engine is using independent valves and could be controlled separately without using that articulated timing connection, e.g. cam-shaft. This engine is also substituting the slipping bearing pads that exist in rotating parts under stress, by chambers gas pads which are in the circular zone moving contacting the case.

20. The engine characterised as in claims 1, to19, this engine could use various ways of regulating and adjusting of almost all engine activities, i.e. controlling fuel consumption, oil-cooling system, output power, pollution treatment quality, the pre-heating of the engine ,the use of aerodynamic power in output and the termination of the defected piston. All these could be done by a computer.

The way of radian (stroke) seal mass contacts on the wheel circumference could be controlled mechanically or by thermal adjustment with relation to engine speed or engine heat or where to be used as required for any wheel in performance in the auto-engine i.e. from out side by controlling device.

21. The engine characterised as in claims 1,to 20, this engine could be modified easily for various kind of power output, when keeping the same general dimensions. By changing the elastic push-arm for the pistons only . With little changes in the fuel mixture feeding device. This because of the circular effect of the engine discipline that could bear different power mods without problem.

22. The engine characterised as in claims 1,to 21, this engine could use various proposals for manufacturing depending on this design principal as different in: power wheel numbers or diameters, cylinders diameters or cylinder (piston) numbers in each wheel, or even deferent dimensions of all these in one engine for the wide auto engine application .A connected hydraulic system for a two pistons in one wheel could be used also to exceed the expel of exhaust gases more rapidly. A metal spring of differential diameter could use in the push-arm.

23. The engine characterised as in claims 1,to 22 this engine could be used vertically in regards to the shaft (crank) direction as a vertical engine performance that because the oil services here do not depend on the earth gravity, They depend mainly on the centrifugal principal .The speedy efficient power output could make it easily to be used in Hoover craft and flying app.(Fig 23/25).Also wheels could be mounted in opposite exhaust openning.

24. The engine characterised as in claims 1,to 23 this engine could use as dual or more ignition spark plugs in big diameters wheels depending on the same design principal considering the radian seals distances of the stroke situation , the exhausts opening , the ignition distributor and the valves mechanism.

25. The engine characterised as in claims 1,to24 , this engine could be used as a group on one or connected shaft (crank), to work for one of variety heavy application, as deferent-power engines each engine could have its own oil services and controlling system to work or stop without influencing on the others .That is because of the smooth-slice rotary design that allows slow or high-speed rotation safely with even any part is not in performance.

26. The engine characterised as in claims 1,to 25 this engine design could use Benzene with different kind of octane or Jet kerosene or even Gas fuel by the same principal .Although the flexibility of piston push-arm could provide that, or by relevant changes in their feeding accessories or elastic pistons push-arm.

27. The engine characterised as in claims 1,to26 this engine could be Multi-purposes engine i.e. auto-engine performance ,this could be done by using these various proposals for the controliing devices on :

A/ Air-fuel mixture feeding pipe opening controlled with a regulator for the pistons in a wheel(for pistons in one wheel-energy unit).

B/ Air-fuel mixture feeding pipes opening controlled with regulators for each wheel unit (each energy unit).

C/ Different pistons diameters in any wheel with their particular accessories.

D/ Different pistons numbers in each wheel with the modified distributor .

E/ Different wheels diameters with their particular feeding accessories.

F/ Different piston push-arm (elastic resistance) groups for particular wheel(s) that might use in specific performance i.e. fast acceleration, high speed or in extra heavy work or idle work.

G/ Exhaust opening places ,angles and its wings direction and the location of the terminal exhaust seal.

28. The engine characterised as in claims 1,to,27, The engine characterised as in claims 1,to,29 this engine using the maximum potential fuel energy because of:

A/ Its constant (and longer) moment arm affection of piston P. stroke on Crank.

B / Its positive affection for all pistons movements i.e. all P. strokes on Crank.

C / Its minimum combustion energy loss due to the system slice machinery.

D / Its utilisation of the elastic potential force of the elements .

E /Its utilisation for the best combustion of air-fuel mix in the chamber always.

F/ Its usage of the pressured charged air-fuel mixture to the chambers.

G/ Its utilisation of the aerodynamic power of exhaust gases in output.

H/ Its utilising of all the physical powers occur with the internal combustion.

30. The engine characterised as in claims 1,to 29 this engine could eliminate the gear transmission in a vehicle if working as auto engine, and could use simple fuel spraying device or computerised in stead of the complicated carburettor .

31. The engine characterised as in claims 1, to 30, this engine is utilising the principle of the automatic emission re-fill for the weapon i.e. for shoot-gun and fast-canon and could use the same flexible parts to provide useful ways in transferring this harmful industries to peaceful useful industries ...!

32. The engine characterised as in claims 1,to,31 this engine can work slowly or in a very fast performance due to its smooth, slice rotary speedy efficiency.